



Network Newsletter

and

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Editorial

Superstorms, Climate Change and Superstorm Seasons

As researchers interested in how climate and human activities interact, some colleagues and I have for the past few years been thinking about and starting to research the notion of “superstorms.” We were attracted to the idea because someone, for whatever reason, happened to label a severe winter storm in North America in mid-March 1993 as a “superstorm.” We wondered why. Was it because of the intensity of the event? Was it because of the impacts on society? Was it because the media might have been seeking to grab the attention of the public on an otherwise uneventful news week? [NB: As far as we can tell, it was the Weather Channel that first referred to this particular winter storm as a superstorm.]

Climate scientists have been telling the world that, accompanying a global warming of the climate system, there would likely be an increase in the frequency and intensity of extreme meteorological conditions. They have also suggested that there would likely be a change in the geographic range of those extremes, such as droughts, floods, frosts, fires, and severe storms including summer, winter, and tropical storms. This reinforced our interest in the notion of a superstorm.

In 2004, forecasters at the US National Weather Service developed an index for rating such winter storms for their level of severity. As luck would have it for our research, the 1993 wintertime superstorm turned out to have been the worst winter storm (#1) in the US during the twentieth century.

My colleagues and I decided that, by focusing our research on various physical and societal aspects of this storm, we could use it not only to understand a superstorm and its likely impacts, but also to foster cooperation among researchers from a range of academic disciplines interested in different aspects of weather, climate, climate change, and climate forecasting, as well as the societal impacts of each of them.

Weather researchers and forecasters can review the cascade of weather and weather-related forecasts that stemmed from the original 5-day forecast. Climate researchers and modelers can use Superstorm '93 in their study of seasonal variability and extremes. Climate change researchers can focus on whether this is the kind of event that is more likely to occur with

greater intensity in the future. Social scientists can use this to study societal responses to forecasts. They can also use it to check how well society responded before and after it struck.

As I write this, we are in the middle of the 2004 hurricane season in the Atlantic and the typhoon season in the Pacific. Countries along the western boundary currents in both the tropical and subtropical Atlantic and Pacific oceans are under a continued threat from tropical storms of high intensity, relatively high frequency, several of which seem to be following a certain trajectory plaguing the residents of the same location. This may be an aspect of tropical storms that has not as yet been highlighted in either global warming studies or in weather studies.

We now know that several typhoons so far this year have had negative impacts on Taiwan and Japan, for example. We have also witnessed four major tropical storms that have hit some part of Florida in less than two months, causing billions in damage and several deaths. Are these unique occurrences? One can ask what such a storm tendency (i.e., lots of devastating – some might say “blockbuster” storms) means for political, economic, and social impacts and responses of affected countries in the future. What is being suggested here is that the tropical storms of 2004 in the Pacific and Atlantic might foreshadow the possibility of a new normal (i.e., average) seasonal phenomenon that might be labeled as a “superstorm season.” In fact, each storm in a series does not have to be a major one before it causes problems to society.

Climate varies from season to season, year to year, and decade to decade. We must now think about the possibility of a new kind of hurricane season, one in which there are numerous superstorm events in succession. Even though a local, state, or national society might well be able to cope today with a single such storm, maybe even two of them, it might start to think about what it might need to prepare for, as well as respond to, multiple superstorms within several weeks and within the same geographic location.

Regardless of one's view about the global warming issue, one can convincingly argue that what has happened in the recent past could happen again. Therefore, societies (researchers and political leaders alike) must begin to take such a likelihood into their strategic development and disaster avoidance planning processes.

--Michael H. Glantz



Institute for the Study of Society & Environment (ISSE)
National Center for Atmospheric Research (NCAR)
PO Box 3000, Boulder, CO 80307
www.isse.ucar.edu/newshp • jan@ucar.edu

LET'S HEAR FROM YOU!!

This newsletter depends on YOUR input. Please send relevant information that comes across your desk, whether it is a news item, meeting, job opening, or publication, to the address on the back cover. Information to be included in the next newsletter must be received by **31 December 2004**. If you prefer to receive the newsletter on line, please let us know at www.isse.ucar.edu/newshp and you will be reminded when a new issue is released. Thanks again for your contributions!

Editor's Note:

Because of rising mailing costs and to cut down on the use of paper, the staff wishes to ask readers who receive a hard copy of the newsletter if you might be interested in receiving a PDF version instead. This would help us keep the newsletter alive, as well as allow it to continue to be distributed widely to those who do not have that capability. For several years the newsletter has been on line with a PDF copy available for wider distribution. If we do not hear from you by email asking to be removed from the paper edition, nothing will change. However, if you can help us to save on postage costs and paper, please send an email to hopper@ucar.edu with Network Newsletter/ENSO Signal on the subject line and with your full name and email address in the body of the email. We will take care of it from there. You will be reminded by email when a new issue is released. Thank you for helping to keep the newsletter alive and well!

ENSEMBLES-EU

A European Union (EU) project, ENSEMBLES, hosted a kick-off meeting 15–17 September at the Max Planck Institute for Meteorology in Hamburg, Germany. ENSEMBLES is a five-year project under EC Framework Programme VI. Partners from the EU, Switzerland, Australia, and the United States will work on ten research themes to improve predictions of climate change and their impact. The research groups want to develop an ensemble prediction system based on state-of-the-art high-resolution, global and regional earth system models, validated against quality controlled, high-resolution gridded datasets for Europe to produce an objective probabilistic estimate of uncertainties in future climate at the seasonal, decadal, and longer

timescales. The scientists want to maximize the exploitation of the results by linking the outputs to a range of applications, including agriculture, health, food security, energy, water resources, insurance and risk management. The project will be managed by a Management Board and coordinated at the Hadley Centre in Bracknell, England. For further information see www.ensembles-eu.org/

EMISSIONS-FREE COUNTRY

Iceland is conducting an experiment that may forever change how energy is supplied. Science, politics and the corporate world are working together to break its dependence on coal, oil and gas. In the future, this small island nation will get its energy from the H₂ in H₂O. The first steps have begun, and in 25 years the world's first hydrogen economy may be a reality: clean, sustainable, and endless supply of energy. The world is watching closely, and these pioneering Vikings are confident it will follow their lead. Iceland is an ideal laboratory for experimenting with the hydrogen economy. The country has only 280,000 inhabitants, but the infrastructure is comparable to that of any other modern industrial nation. The extreme weather conditions offer an added advantage for testing the new technology. Icelandic New Energy expects to have fully completed the transition to the clean, sustainable hydrogen economy by the year 2025. (By Jurriaan Kamp, originally published in [Ode Magazine](#), 1, August 2004)

CALIFORNIA'S CLIMATE REGISTRY

The Climate Registry registered its first private company in September 2004. The California Climate Action Registry was established by California statute as a non-profit voluntary registry for greenhouse gas (GHG) emissions. The purpose of the Registry is to help companies and organizations with operations in the state to establish GHG emissions baselines, against which any future GHG emission reduction requirements may be applied. The Registry encourages voluntary actions to increase energy efficiency and decrease GHG emissions. Using any year from 1990 forward as a base year, participants can record their GHG emissions inventory. The State of California, in turn, will offer its best efforts to ensure that participants receive appropriate consideration for early actions in the event of any future state, federal, or international GHG regulatory scheme. Registry participants include businesses, non-profit organizations, municipalities, state agencies, and other entities. More information is available at www.climateregistry.org/

ESIG (Environmental & Societal Impacts Group) is now part of a larger new NCAR institute, ISSE (Institute for the Study of Society & Environment). We'll continue to use ESIG, but we can also be reached via www.isse.ucar.edu

LINKING CLIMATE, WATER AND CIVILIZATION

A new study aims to provide new insights into the key relationships between climate, water availability and human activities in the semi-arid regions of the Middle East and North Africa (MENA). This study is getting under way at the University of Reading. The research will help shape our perception of the past, present and future of one of the most complex – and often troubled – parts of the world. With a major funding award of nearly £1,240,000 from the Leverhulme Trust, a team of Reading researchers, including meteorologists, hydrologists, geologists, archaeologists and geographers, will work together to assess changes in the hydrological climate in the MENA region and its impact on human communities. The one resource common to past and present activity is water, changing from a natural resource to a cultural commodity, and now having become the center of political tension. For more information, contact Craig Hillsley, University of Reading, c.hillsley@rdg.ac.uk or to learn more about the Leverhulme Trust, visit www.leverhulme.ac.uk

FLASH!! KYOTO PROTOCOL NEWS

To enter into force, the Kyoto Protocol must be ratified by 55 Parties to the Convention, including developed countries, whose combined 1990 emissions of carbon dioxide exceed 55% of the Parties' total emissions. More than 120 countries have ratified the Protocol. When the United States (36%) rejected the Protocol in 2001, the 55% emissions threshold can now only be met with Russia's participation (17%). The Russian Cabinet has decided to forward the Protocol to its Parliament (the Duma) for ratification. This re-energizes international cooperation on cutting greenhouse gas emissions. Russian ratification would ensure that the Protocol enters into force. Governments will discuss their efforts to achieve their Kyoto targets and other actions to address climate change at COP 10 (Tenth Session of the Conference of the Parties to the Convention). For more information, see the UNFCCC (UN Framework Convention on Climate Change) website at unfccc.int or email the Media Information Office at press@unfccc.int

ARE YOU A WETLAND PROFESSIONAL?

The combined experience and knowledge of wetland professionals around the world form a tremendous pool of information from which wetland management, restoration, policymaking, and science can benefit. A new "Wetlands Professionals Platform" has been created by the UNESCO-IHE Institute for Water Education and the Institute for Inland Water Management and the Wetland Advisory and Training Centre (WATC) in order to facilitate the search for information and people. Any visitor of the Platform can consult the database and explore this network of wetland professionals to exchange knowledge and experience. Many in the database are alumni of the international courses on Wetland Management and Wetland Restoration, organized by WATC and UNESCO-IHE's Environmental Science Master's program. However, the world of wetland professionals is much larger, so wetland professionals worldwide are encouraged to become members and use the collaborative workspace to share information, tools, questions, and answers. The Platform is available at www.wetlandprofessionals.org or contact wetland@unesco-ihe.org

UNEP AND ECO SIGN COLLABORATION AGREEMENT

The UN Environment Programme (UNEP) and ECO (Economic Cooperation Organization) in Tehran have signed an Agreement to strengthen environmental management in the ECO region. ECO is an intergovernmental regional organization that promotes economic, technical, and cultural cooperation among the Member States. Current membership of ECO includes Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyz Republic, Pakistan, Tajikistan, Turkey, Turkmenistan, and Uzbekistan. The Agreement identifies the potential for joint activities to increase the use of renewable energy, through UNEP's Solar and Wind Energy Resource Assessment Project (SWERA), strengthen environmental laws, enhance environmental and training programs, encourage eco-friendly tourism development, and improve environmental monitoring and assessment. In late 2003, UNEP assisted countries in the region to negotiate and agree to a Framework Convention for the Protection of the Caspian Sea. For more information on ECO, see the website at www.ecosecretariat.org and information on SWERA at swera.unep.net

INTERNATIONAL DAY FOR DISASTER REDUCTION

The theme for this year's World Disaster Reduction Campaign is "learning": learning to live with the risks that hazards pose to communities. This is one of the key

ways to protect people and property. The UN ISDR (International Strategy for Disaster Reduction) is holding an international art contest for young people aged 16 and under. The best 12 pictures that illustrate what measures can be taken to reduce risk and vulnerability to disasters will be selected for publication in an ISDR 2005 calendar that will be disseminated to thousands of participants at the World Conference for Disaster Reduction (WCDR), to be held 18–22 January 2005 in Kobe, Japan. In 2004, the International Day for Disaster Reduction will be commemorated on 13 October. For information about the Campaign and art contest are available at www.unisdr.org and more information about the WCDR is available at www.unisdr.org/wcdr



BLUE PLANET PRIZE RECIPIENTS 2004

Atmospheric scientist **Susan Solomon** and former Norwegian Prime Minister **Gro Harlem Brundtland** have been awarded the 2004 Blue Planet Prize, given each year to people who make outstanding achievements in scientific research and its application in order to help to solve global environmental problems. The prize is sponsored by the Asahi Glass Foundation in Tokyo, Japan. Solomon was given the prize for her work in identifying the mechanism through which chlorine compounds from chlorofluorocarbons (CFCs) combined with Antarctica's cold temperatures contributed to the creation of the Antarctic's ozone hole. Brundtland was the first former environment minister to head a government, and she won for putting forward the concept of sustainable development to the world, especially through her work with the World Commission on Environment and Development in the 1980s. The awards ceremony will be held on 10 November 2004 in Tokyo and the following day the recipients will give commemorative lectures at the United Nations University. For more information about the Blue Planet Prize and its laureates, visit www.af-info.or.jp

BORNEO BIODIVERSITY PROGRAM CALL FOR PAPERS

The Borneo Biodiversity and Ecosystems Conservation (BBEC) Program, a five-year program, is entering its third year. Since its launch in February 2002, BBEC has applied an integrated approach to cover four areas essential to conservation of endangered and fragile biodiversity and ecosystems of Sabah (Malaysia):

research and education; park management; habitat management; and public awareness. BBEC is sponsored by the Sabah State Government and the University of Malaya at Sabah with assistance from the Japan International Cooperation Agency (JICA). "Biodiversity Conservation As a Way of Life" is the theme of its third international conference, to be held 21–26 February 2005 in Sabah, Malaysia. The Organizing Committee solicits participation from various government agencies, industrial and commercial sectors and the public, in order to share their opinions and experiences. Potential papers from ASEAN nationals may receive sponsorship from JICA. Send abstract or inquiries to BBEC IC 2005 Secretariat, Institute for Tropical Biology & Conservation, Universiti Malaysia Sabah. Fax: 60-088-320291 (ITBC) or 60-088-250590 (JICA-BBEC); email bbec@sabah.gov.my or danielpamin@hotmail.com. Deadline for abstract submission is in November 2004. Updates and more information at www.bbrec.sabah.gov.my

INTERNATIONAL DAY OF THE WORLD'S INDIGENOUS PEOPLES

In 1994, the UN General Assembly decided that the International Day of the World's Indigenous Peoples would be observed on 9 August every year during the International Decade of the World's Indigenous Peoples, starting on 10 December 1994. The goal of the Decade was to strengthen international cooperation for solving problems faced by indigenous people in the areas of human rights, the environment, development, education, and health. In April 2000, the Commission on Human Rights adopted a resolution to establish a Permanent Forum on Indigenous Issues (PFII) as an advisory body to the UN Economic and Social Council. It has held three annual sessions and has contributed to increasing awareness within the UN system to matters of concern to indigenous peoples. See the website at www.un.org/esa/socdev/unpfii/

CERI ENERGY INSIGHT

CERI (Canadian Energy Research Institute) has designed a new series of short commentaries on current energy issues in Canada and North America entitled *CERI Energy Insights*. CERI is a cooperative research organization established through an initiative of government, academia, and industry. *CERI Energy Insights* is designed to give the reader a broader and deeper understanding of different energy issues and how they are interrelated. Issue #1 (September 2004) is available in PDF from Daniel Czamanski, CERI Senior Vice President, Tel: 1-403-220-2371; email dczamanski@ceri.ca

OPEN MEETING 2005 CALL FOR SESSIONS

The Sixth Open Meeting of the Human Dimensions of Global Environmental Change Research Community has announced a Call for Sessions that is available only through its website. All interested session organizers are encouraged to submit a session proposal organized under one of the following themes: adaptive management and resilience; coastal zones and human use of oceans; environmental history; globalization and global environmental change; global environmental change and human security; human dimensions of carbon and water management, food and health; industrial transformation; institutional dimensions of global environmental change; land-use and land-cover change; methods in human-environment studies; regional approaches to human-environment studies; science-policy interface in global environmental change; sustainable development; and urbanization. The deadline for submitting a session is 15 November 2004. Two co-organizers are required for each session proposal, and at least one co-organizer is encouraged be from the South. See the website at openmeeting.homelinux.org or www.ihdp.org and click on the 2005 Open Meeting link. The meeting will be held 9–13 October 2005 in Bonn, Germany.

AUSTRALIA'S NATIONAL TREE DAY

Organized nationally by Planet Ark in association with Toyota and the AMP Foundation, Australia's Tree Day sees more than 200,000 volunteers join together to plant a million native trees and shrubs at more than 3,000 sites nationwide. Trees help to filter water, combat salinity, clean the air, and increase flows into water catchments. They also provide food and shelter to Australia's unique wildlife and are an integral part of the country's biodiversity. Now in its ninth year, National Tree Day continues to expand and to get communities across Australia to plant trees as a way of caring for the earth. National Tree Day is held on the last Sunday of July each year, with alternative dates if that date is not an ideal time to plant. Planet Ark has a permanent website for those who wish to become involved at www.planetark.com/treeday or email treeday@planetark.com (from [Planet Ark](http://www.planetark.com))

CHARCA

More than 5.1 million people in India are infected with HIV: 500,000 more than at the end of 2002. Dr. Manmohan Singh, India's new Prime Minister, is calling for social reform to fight gender inequalities that promote the spread of AIDS. The CHARCA

(Coordinated HIV/AIDS Response through Capacity Building and Awareness) project is a coordinated effort to increase capacities and reduce the vulnerability of young women in India to HIV infection. CHARCA aims to reduce young women's vulnerability by providing information, improving skills, and increasing access to quality reproductive health services. It also aims to build leadership, increase support networks, and create a positive enabling environment. Through this process, it seeks to reduce HIV/AIDS among women and to empower them to protect themselves and realize their rights. The United Nations lead implementing agencies for CHARCA are the UN Development Programme, UN Population Fund, UNICEF, the UN Children's Fund, and the UN Office on Drugs and Crime. For more information, contact Kenneth Wind-Andersen, Country Coordinator, UNAIDS, 55 Lodhi Estate, New Delhi, India 110003; email windandersenk@unaids.org or Revathi Narayanan, National Project Coordinator, CHARCA, C-23 Defence Colony, New Delhi, India 110024; email revathi.narayanan@undp.org or see the website at www.youandaids.org/Charca/

CLIMATE AND HIV/AIDS

The UN Development Programme (UNDP) Southeast Asia HIV and Development Programme (UNDP-SEAHIV) has published several papers focusing on agriculture and its importance, in itself and together with rural communities, in the HIV/AIDS epidemics. The UN FAO (Food and Agriculture Organization) Environment and Natural Resources Service has recently completed a paper on *Climate and HIV/AIDS: A Hotspots Analysis for Early Warning Rapid Response Systems* that forms a package with another recent paper, *Environment and Agriculture Interactions: Implications for HIV and Other Infectious Diseases*. This paper examines HIV/AIDS together with other infectious diseases within the immediate physical environment of rural communities and households. Both of these papers are available on the web at www.hiv-development.org/publications



ICIMOD

ICIMOD (International Centre for Integrated Mountain Development) is the first international organization to make a commitment to improving the living conditions of mountain inhabitants in a sustainable way. ICIMOD also serves as the Secretariat for the Asia Pacific Mountain Network (APMN) and the Mountain Forum. ICIMOD is currently the Convener of the Forum. The APMN is a forum of institutions and individuals for sharing

information, raising concerns, and searching for solutions to issues concerning mountain and upland areas of the Asia Pacific region. The Forum is a global network created by those interested in mountains for mutual support, information sharing, advocacy, and to develop sound policies to use the world's mountain environmental heritage in a sustainable manner. For more information, see the website at www.icimod.org



ENSO = El Niño–Southern Oscillation
(www.esig.ucar.edu/signal)

CURRENT STATE OF THE TROPICAL PACIFIC

(From the Climate Prediction Center's *ENSO Diagnostic Discussion*) www.cpc.ncep.noaa.gov (as of 9 September 2004)

Warm-episode conditions are expected to continue into early 2005. Positive SST anomalies greater than +0.5°C persisted in the central and western equatorial Pacific during August 2004. The increase and eastward expansion of the area of anomalous warmth in the central equatorial Pacific during July–August indicate the early stages of a warm (El Niño) episode. However, in spite of the anomalous warmth in the central equatorial Pacific during August, there appears to be little or no reflection of that warmth in the average pattern of deep precipitation over the region. The NOAA operational definition for El Niño, a three-month running mean of the Nino3.4 index greater than or equal to +0.5°C, was satisfied for the period June–August 2004. At this time, it is not clear what, if any, impacts this weak event will have on ocean temperatures in the classical El Niño region (Nino1+2) along the west coast of South America.

GLOBAL MONITORING FOR ENVIRONMENT AND SECURITY

The European Space Agency (ESA) Earth Observation Board met in September 2004 to discuss funding for the next stage of the ESA component of the European GMES (Global Monitoring for Environment and Security). The Board agreed to allow work to begin on the space component of GMES by approving funds for architecture studies, ground segment design, and initial definition studies for the five sentinels, which will be the backbone of the future European Earth Observation System to monitor the environment. GMES is a joint initiative of the European Commission (EC) and ESA, which aims to respond to growing concern among European policy-

makers to have reliable access to information on the environment on global, regional, and local scales, with an emphasis on global change, environmental stress, and natural and human-made disasters. An Action Plan for 2004–2005 identifies a need to define priorities for GMES services through preparatory activities, including a study on the socioeconomic case for GMES themes. For more information, visit the GMES website at earth.esa.int/gmes or contact ESA Media Relations Simonetta Cheli. Tel: 39-06-9418-0350.

DRAFT PLAN FOR GLOBAL EARTH OBSERVATION SYSTEM

The US White House Office of Science and Technology Policy (OSTP) is requesting comments on its draft ten-year Strategic Plan for the US Integrated Earth Observation System. The Strategic Plan reflects the coordinated efforts of 18 federal agencies under the auspices of the National Science and Technology Council. The Plan is intended to represent an important element in the third Global Earth Observations Summit to be held February 2005 in Brussels, Belgium. The concept of integration is at the heart of the draft Strategic Plan, which emphasizes that the earth is an integrated system that contains linked ecological, biological, and geological systems. Ongoing development of the Global Earth Observation System (earthobservations.org) is critical to the health of the planet. The text of the draft Strategic Plan is available at iwgeo.ssc.nasa.gov/draftstrategicplan and comments are due by 8 November 2004. Please send any comments to iwgeocomments@noaa.gov

CORAL REEFS ADAPTING TO CLIMATE CHANGE

In a recent brief communication in the journal *Nature*, Andrew Baker and colleagues released information about corals that were sampled before, during, and after the 1997–98 El Niño event that brought warm waters into the central and eastern Pacific Ocean, which severely affected coral reefs. The article notes that certain corals containing unusual algae have become more tolerant to high temperatures and are more abundant on reefs that have been severely affected by recent climate change. This suggests an adaptive shift in coral reefs that may alter the predicted demise of those reefs by the year 2030. Baker is in the Marine Program, Wildlife Conservation Society, Bronx, New York; email abaker@wcs.org or see the journal article:

Baker, A.C., C.J. Starger, T.R. McClanahan, and P.W. Glynn, 2004: Coral reefs: Coral's adaptive response to climate change. *Nature*, **430**, 741 (12 August 2004).

HISTORICAL HURRICANE TRACKS

The NOAA Coastal Services Center has a link to provide historical hurricane tracks. The Historical Hurricane Tracks tool is an interactive mapping application that allows one to easily search and display Atlantic Basin and East-Central Pacific Basin tropical cyclone data. If a researcher is looking for a specific storm track, the information is available by entering a zip code, latitude and longitude coordinates, city, state, or geographic region and then view the selected tracks on a map. The information is available at the NOAA Coastal Services Center website at hurricane.csc.noaa.gov/hurricanes/

MJO AND PDO

The MJO (Madden-Julian Oscillation) and the PDO (Pacific Decadal Oscillation) are major players in variations in the climate. The MJO is the major mode of variability in the tropics on a month-to-month time scale (less than a season). The MJO involves variations in wind, sea surface temperature (SST), cloudiness, and rainfall. It affects the entire tropical troposphere, but it is most evident in the Indian Ocean and the western Pacific Ocean. In 1971 and 1972, Rol Madden and Paul Julian (both at that time at NCAR) identified the oscillation while analyzing zonal wind anomalies in the tropical Pacific. Since the 1997–98 El Niño event, interest in the MJO has increased, and numerous articles and websites on the phenomenon have appeared. Essential information was gathered during that event that may give researchers a better understanding of the different mechanisms by which SST anomalies can be induced by the MJO. The Climate Prediction Center has more information available at www.cpc.ncep.noaa.gov/products/precip/CWlink/mjo_iso.html

The PDO is a long-term fluctuation in Pacific climate, in many ways a long-lived relative of ENSO. It waxes and wanes approximately every 20 to 30 years. Some scientists speculate that the atmosphere recently entered into the negative phase of the PDO, characterized by lower-than-normal sea surface heights connecting the north, west, and southern Pacific. The term PDO was coined in the mid-1990s by Steven Hare at the University of Washington. The causes for the PDO are not currently known, but because of its apparent strong tendency to last for several decades, successful forecasting of the PDO may assist scientists in ENSO forecasting as well. NASA's Jet Propulsion Lab has an informative link about the PDO available at topex-www.jpl.nasa.gov/science/pdo.html

OCEAN BLUEPRINT FOR THE 21ST CENTURY

In September 2004, the US Commission on Ocean Policy delivered its final report, "An Ocean Blueprint for the 21st Century" to the US President and Congress. The report calls for a new governance framework, more investments in marine science, and a new stewardship by all Americans to halt the decline of this nation's oceans and coasts. The Final Report is available electronically in PDF and contains numerous modifications from the Preliminary Report released in April 2004. The changes were made in response to comments received from 37 governors, 5 tribal leaders, one regional governors association, and 800 interested stakeholders and other technical experts. The website is at oceancommission.gov/documents/welcome.html

JOB OPPORTUNITIES

The University Corporation for Atmospheric Research (UCAR) announces the continuation of the **NOAA Postdoctoral Program in Climate and Global Change**. UCAR manages this NOAA-sponsored program, which pairs recently graduated postdoctorates with host scientists at US institutions to work in an area of mutual interest. The objective of this program is to help create the next generation of researchers needed for climate studies. It endeavors to attract recent PhDs in sciences that address studies of relevance to the NOAA Climate and Global Change Program refer to NOAA's website at www.ogp.noaa.gov or send an email attachment in PDF, Microsoft Word or Corel WordPerfect to Meg Austin at vsp@ucar.edu. Full text announcement available at www.vsp.ucar.edu

Global Climate and Environmental Change Postdoctoral Position. The Department of Geology and Environmental Geosciences at Northern Illinois University offers a postdoctoral research position to begin in January or February 2005 to complement a newly developed Analytical Center for Climate and Environmental Change (ACCEC). Expertise is needed in one of the following three areas: (1) geological, glaciological, oceanographic, or microbiological analysis of environments beneath ice shelves and grounded ice margins, with an emphasis on the Antarctic; (2) geochemical and stable isotope analysis of paleoclimate records with an emphasis on global change and more recent geological/historical time; and (3) development of biomarkers as tracers of natural and human-induced environmental change. Salary is available for one year and is anticipated for a second year. Applicants must submit a letter of application, curriculum vitae, and statement of research interests and plans for obtaining further research funds, and at least three letters of reference sent by the 15 October 2004 to: Search

Committee Chair, Dept. of Geology and Environmental Geosciences, Northern Illinois Univ., DeKalb, IL 60115. A PhD in the geosciences at the time of appointment will be expected.

PAST MEETINGS

Economic Dimensions of Climate Change – Climate Change Futures project

When: 2-4 June 2004

Where: Rüschtikon, Switzerland

Contact: Global Dialogue; e-mail:

global_dialogue@swissre.com;

[www.ruschlikon.net/INTERNET/rschwebp.nsf/\(UID\)/6E81CDD7EB31301BC1256E7C002591C2](http://www.ruschlikon.net/INTERNET/rschwebp.nsf/(UID)/6E81CDD7EB31301BC1256E7C002591C2)

CLIVAR 2004 – Understanding and Predicting our Climate System

When: 21-25 June 2004

Where: Baltimore, Maryland, USA

Contact: 256/20 Southampton Oceanography Centre, Empress Dock, Southampton SO14 3ZH, UK; tel: 44-2380 596777; fax: +44-2380 596204; email:

icpo@soc.soton.ac.uk; www.clivar2004.org

Workshop on Native American Climate Decision Making

When: 12-13 July 2004

Where: Boulder, Colorado

Contact: ESIG/NCAR; tel: 303-497-8117; fax: 303-497-8125; www.esig.ucar.edu/native_american/

NCAR Summer Colloquium on Climate and Health

When: 21-28 July 2004

Where: Boulder, Colorado

Contact: ESIG-NCAR; tel: 303-497-8117; fax: 303-497-8125; <http://www.asp.ucar.edu/colloquium/2004/CH/>

III LBA Scientific Conference- The Large-Scale Biosphere-Atmosphere Experiment in Amazonia

When: 27-29 July 2004

Where: Brasília, Brazil

Contact: Erika Schloemp, tel: 92-643-3238; e-mail:

brasilian_committee@mail.lbaconferencia.org;

www.lbaconferencia.org/eng

35th Pacific Islands Forum

When: 5-7 August 2004

Where: Apia, Samoa

Contact: Pacific Islands Forum Secretariat

Private Mail Bag, Suva, Fiji; tel: +679-3312 600; fax:

+679-3305 573; e-mail: info@forumsec.org.fj;

www.dfat.gov.au/geo/spacific/regional_orgs/spf.html

Western Pacific Geophysics Meeting

When: 16-20 August 2004

Where: Honolulu, Hawaii

Contact: AGU's Meetings Department; tel: 202- 777

7333; e-mail: mailto:mmeetinginfo@agu.org;

www.agu.org/meetings/wp04

World Water Week in Stockholm

When: 16-20 August 2004

Where: Stockholm, Sweden

Contact: Stockholm International Water Institute,

Hantverkargatan 5, 112 21 Stockholm, Sweden; tel: 46 8 522 139 60; fax: 46 8 522 139 61;

e-mail: hsivi@siwi.org; www.siwi.org

The USWRP Open Workshop on the Implementation of THORPEX

When: 19-20 August 2004

Where: Boulder, Colorado

Contact: Pam Johnson, National Center for Atmospheric Research; tel: 303-497-8971; e-mail: mjohnsonp@ucar.edu;

box.mmm.ucar.edu/uswrp/recent_meetings/recent_meetings.html

Climate Variability: From Observation to Prediction

(3rd NCCR Climate Summer School)

When: 29 August–3 September 2004

Where: Ticino, Switzerland

Contact: NCCR Climate; University of Bern;

Erlachstrasse 9a; CH-3012 Bern, Switzerland; tel: +41

31 631 31 45; fax: +41 31 631 43 38; e-mail: nccr-climate@giub.unibe.ch;

www.nccr-climate.unibe.ch

Fourth International Conference on Management Information Systems, incorporating GIS and Remote Sensing

When: 13–15 September 2004

Where: Malaga, Spain

Contact: Amy D'Arcy-Burt; Conference Secretariat; MIS 2004; Ashurst Lodge, Ashurst; Southampton, SO40

7AA; tel: 44 (0) 238 029 3223; fax: 44 (0) 238 029 2853;

e-mail: adarcy-burt@wessex.ac.uk;

www.wessex.ac.uk/conferences/2004/mis04/

Regional Workshop on Human Dimensions of Global Environmental Change Research –Southern Africa-

When: 13–15 September 2004

Where: Richards Bay, South Africa

Contact: Hector Chikoore; e-mail:

hectorchikoore@yahoo.com;

www.sarprn.org.za/documents/d0000884/index.php

El Niño Early Warning for Sustainable Development in Pacific Rim Countries and Islands

When: 13–16 September 2004

Where: Galapagos Islands, Ecuador

Contact: DJan Stewart, Secretariat; tel: 1-303-497-

8134; fax: 1-303-497-8125; e-mail: jan@ucar.edu;

www.esig.ucar.edu/galapagos

Climate Impacts on Salmon Management and Recovery in the Columbia River Basin

When: September 21, 2004

Where: Portland, Oregon

Contact: Lara Whitely Binder, Climate Impacts Group; tel: 206-616-5349; e-mail; mwhitelybinder@yahoo.com; www.cses.washington.edu/cig/outreach/workshopfiles/portland2004salmon/index.shtml

Climate Change: A Challenge or a Threat for Water Management?

When: 27–29 September 2004

Where: Amsterdam RAI, The Netherlands

Contact: Nederlandse Vereniging voor Waterbeheer, Sir Winston Churchill-laan 273
2288 EA Rijswijk; Postbus 70 2280 AB Rijswijk. tel: (070) 414 47 78; fax: (070) 414 44 20; e-mail: minfo@nva.net; www.nva.net/agenda/26September2004.htm

UPCOMING MEETINGS

The **Joint WGNE/WGSIP/WGCM Workshop on Ensemble Methods – From Weather forecasting to Climate Change** will be held *18–21 October 2004* in Exeter, UK. Analyses of the present and predictions of the future state of the atmosphere / ocean / land are undertaken both routinely and experimentally over ranges from hours to centuries. Uncertainty in initial conditions, in the representation of the system itself, in the external forcing of the system, and in the formulation and solution of the forecast problem all contribute to uncertainty. The characterization of this uncertainty is critical to the use and value of the analyses and forecasts. Ensemble methods offer a potentially powerful approach to characterizing this uncertainty. The workshop will examine ensemble methods as applied to a wide range of analyses and prediction questions on timescales from weather forecasting to climate change. For more information contact the International CLIVAR Project Office; Empress Dock Southampton, SO14 3ZH, UK; e-mail icpo@soc.soton.ac.uk; or George.Boer@ec.gc.ca; cccma.seos.uvic.ca/ensemble/

The **NOAA 29th Annual Climate Diagnostics and Prediction Workshop** will be held *18–22 October 2004* in Madison, Wisconsin. The workshop features sessions on recent climate anomalies & MJO, predictability, the new NCEP climate forecast system (CFS), climate applications of satellite information, variability in the central United States, long-term variations, results from NAME 04 (North American Monsoon Experiment), forecast methods and assessments, ENSO & teleconnections and poster presentations. For more information contact the Department of Atmospheric and Oceanic Sciences, University of Wisconsin; 1225 W. Dayton St.; Madison, WI 53706; Betty Rhyner, AOS

Department Administrator, tel 608 262-2829; e-mail: mbjrhryner@wisc.edu; www.meteor.wisc.edu/calendar/content/cdwkshp.html

The **Southern Pacific University Network Meeting (RUPSUR) on “Biophysical and Socio-Economic Impacts of ENSO on Marine and Terrestrial Ecosystems”** will be held *11–12 November 2004* in Santiago, Chile. Goals of the conference are to consolidate the network of Southern Pacific universities and to invite other universities to join the network to establish multinational and multidisciplinary collaboration for the investigation of the El Niño phenomenon. The goal is also to establish working groups around two main topics: (1) ENSO as part of climate variability and its social and environmental impacts. (2) Changes in biodiversity and other natural resources in relation to human activities. For more information contact: Alejandro León, Departamento de Ciencias Ambientales y Recursos Naturales Renovables, Facultad de Ciencias Agronómicas, Universidad de Chile; Santa Rosa 11.315 - La Pintana, Santiago, Chile; tel (56.2) 6785863, 6785921; fax: (56.2) 6785929; e-mail: sec_rupsur@udep.edu.pe; www.udep.edu.pe/rupsur/

The **3rd IUCN World Conservation Congress** will be held *17–25 November 2004* in Bangkok, Thailand. The World Conservation Congress is the Union's most significant gathering of the global conservation community. Many of today's conservation policies, initiatives and global agreements bear testimony to the power of the ideal of IUCN, where governments and civil society come together to shape the future agenda for conservation and sustainable development. During the congress the **World Conservation Forum** will be the premier conservation event in 2004 for governments, civil society, and the private sector to consider and discuss conservation and development issues at regional and global scales. The Forum will explore the relationships between people, development and conservation. It will provide a vision of where the conservation community and thus IUCN will need to be in 10 years if they are to succeed in their mission and vision. For more information contact Mrs Jane Ganeau, Congress Officer; tel: 41-22-999-0294; fax: 41-22-999-0010; e-mail: jane.ganeau@iucn.org; www.iucn.org/congress

The **IASTED International Conference on Environmental Modeling and Simulation (EMS 2004)** will be held *22–24 November 2004* in St. Thomas, US Virgin Islands. The conference aims to establish an international medium for the exchange of new ideas and practical experience in the areas of modeling and simulation in relation to the environment. It is an opportunity to present and observe the latest research, results, and ideas in these areas. For more information contact IASTED by phone: 403-288-1195; e-mail:

calgary@iasted.org;
www.iasted.org/conferences/2004/vi/ems.htm

A conference on **Coping with Risks Due to Natural Hazards in the 21st Century (RISK 21)** will be held 28 November–3 December 2004 in Ascona, Switzerland. Risks due to natural hazards are continuously increasing during the last decades. To cope with this situation there is a need for integrated risk management strategies including prevention, intervention, recovery and insurance measures, which have to be prioritized based on cost-efficiency considerations. Risks have to be reduced on levels that are accepted by society. Many open questions arise to reach this consensus. The workshop will focus on those aspects in risk management related to understanding risk perception, risk aversion, acceptable levels of risk and risk dialogue. For more information contact CENAT: Flüelastrasse 11; 7260 Davos-Dorf; Switzerland; tel: +41 81 417 02 01; fax: +41 81 417 08 23; e-mail: cenat@slf.ch
www.cenat.ch

The **Berlin Conference on the Human Dimensions of Global Environmental Change** will be held 3–4 December 2004 in Berlin, Germany. The conference aims at establishing and developing a renowned institution for international exchange among social scientists dealing with global change; supporting exchange especially with scientists from developing countries; transferring international research agendas to Germany and Europe; stimulating problem-oriented and interdisciplinary research by organizing communication between political science and its neighbor disciplines as well as between scientists and decision makers; creating internationally recognized publications. For more information contact: Daniel Pentzlin; Environmental Policy Research Centre; Freie Universität Berlin; Department of Political and Social Science; Ihnestr. 22; D - 14195 Berlin-Dahlem; e-mail: BC2004@zedat.fu-berlin.de; www.fu-berlin.de/ffu/akumwelt/bc2004/

The **2004 AGU Fall Meeting** will be held 13–17 December 2004 in San Francisco, California. The meeting is expected to draw over 10,000 geophysicists from around the world and provides an opportunity for researchers, teachers, students, and consultants to present and review the latest issues affecting the earth, the planets, and their environments in space. The meeting will cover topics in all areas of geophysical sciences. For more information contact the AGU Meetings Department, 2000 Florida Avenue, NW, Washington, DC, 20009 USA; tel: 800 966 2481, ext. 333 or 1 202 777 7333; fax: 1 202 328 0566; e-mail: meetinginfo@agu.org (subject: 2004 Fall Meeting); www.agu.org/meetings/fm04/

The **Tenth Session of the Conference of the Parties (COP 10)** will be held 6–17 December 2004 in Buenos Aires, Argentina. The meeting will discuss, among other issues, the status of ratification of the Convention and its Kyoto Protocol and a review of implementation of commitments and other provisions of the Convention. For information contact: Secretariat of the UN Framework Convention on Climate Change, Haus Carstanjen; Martin-Luther-King-Strasse 8; D-53175 Bonn, Germany; tel: (49-228) 815-1000; fax: (49-228) 815-1999; e-mail: secretariat@unfccc.int; unfccc.int/cop10/

The **International Workshop on Water and Disasters** will be held 13–14 December 2004 in London, Ont, Canada. Sponsors: Institute for Catastrophic Loss Reduction (ICLR), Environment Canada, UN University, and the International Strategy for Disaster Reduction. This workshop will provide an interdisciplinary environment to discuss a variety of international, regional, and local initiatives aimed at minimizing the negative impacts of water-related disasters. For more information contact ICLR, 1389 Western Road, London, ON, Canada N6A 5B9; e-mail: sdoyle@uwo.ca; www.iclr.org/pdf/First_Announcement_2004.pdf.

The **Chapman Conference on Tropical-Extratropical Climatic Teleconnections: A Long-Term Perspective** will be held 8–11 February 2005 in Honolulu, Hawaii. The design of this conference is to be a multidisciplinary conference with the aim of promoting communication between paleoclimatologists, paleoceanographers, and climate dynamicists on questions of climate change processes at different latitudes and time scales. The main questions that the conference will be designed to address are: (1) What are the atmospheric, oceanic, and biogeochemical pathways that can translate local changes into global ones? (2) How do these processes explain synchronous, asynchronous, and rapid climate change? (3) How are the modes of variability in the climate system (frequency and intensity) and their teleconnections altered by changes in the mean climate system conditions? What are the thresholds and nonlinearities that affect these connections? For more information contact: American Geophysical Union (AGU); 2000 Florida Avenue N.W. Washington, DC 20009-1277 USA; tel: +1-202-462-6900 or 800-966-2481; fax: +1-202-328-0566; e-mail: meetinginfo@agu.org; www.agu.org/meetings/cc05ecall.html

The **International Conference on Coastal Hazards** will be held 9–11 February 2005 in Thanjavur, India. For the first time an international conference on coastal hazards is organized in India. Natural hazards such as cyclones, hurricanes, tornadoes, etc., are on the rise. Nevertheless, the manmade technological hazards due to hydrocarbons are affecting fragile coastal

ecosystems. It is intended to incorporate the views of the international community through this conference. For more information contact Dr. (Mrs.) H.R. Vasanthi, Organizing Secretary Coastal Hazards Conference, CARISM; SASTRA Deemed University; Thanjavur – 613 402; tel: (04362) 264346 (O); mobile : 94431-35842 ; e-mail: vasanthi@biotech.sastra.edu; www.sastra.edu/icch

The Third International Conference on Water Resources Management will be held *11–13 April 2005* in Algarve, Portugal. The conference will present the more recent technological and scientific developments associated with the management of surface and sub-surface water resources. Issues of water quality, quantity, management and planning, as well as other related topics, are essential to the future of the world population. Water-related conferences organized by the Wessex Institute of Technology have been held throughout the world over the last 25 years, as a result of the willingness of colleagues within the international community to participate in the transfer of knowledge during these meetings. For more information contact Amy D'Arcy-Burt, Conference Secretariat, Water Resources Management 2005; Wessex Institute of Technology; Ashurst Lodge, Ashurst; Southampton, SO40 7AA; tel: 44 238 029 3223; fax: 44 238 029 2853; e-mail: adarcy-burt@wessex.ac.uk; www.wessex.ac.uk/conferences/2005/waterresources05/

The 16th Global Warming International Conference will be held *19–21 April 2005* in New York, USA. Work sessions are: Global Warming Science & Policy; Carbon & GHG Management; Extreme Events and Impact Assessment; NAO and El Niño; Global Warming and the Oceans; Greenhouse Gas & Ecosystems; Human Health in a Changing Climate; Agricultural and Forestry Resources Management; Water Resources; Sustainable Environment and Health for the 21st Century; Remote Sensing and Global Surveillance; Clean Energy Technology; Low GHG Transportation; Education: Global Change & Sustainable Development. Abstracts have to be submitted by 30 October 2004. For more information contact James A. Roberts, GWXVI International Program Committee, PO Box 5275, Woodridge IL 60517-0275 USA; fax: 1-630-910-1561; e-mail: jroberts@globalwarming.net; on the Web at www.globalwarming.net/

The EnviroExpo & Conference 2005 will be held *3–4 May 2005* in Boston, Massachusetts USA. The 17th annual EnviroExpo & Conference is the leading technical event in the country for environmental professionals. More than 2,500 attendees are expected at the conference and exhibition at the Seaport World Trade Center in Boston. The conference will focus on key technical concerns of professionals at industrial, manufacturing, commercial business, government, utility, and other facilities dealing with environmental issues.

The conference theme, “Managing the Environment in the 21st Century,” will be emphasized throughout the program, which will feature 30-plus sessions on environmental management, operations, and technology topics. For more information contact Michael Scheibach Ph.D., Conference Director by phone: (816) 350-2049, or e-mail: mscheibach@enviroexpo.com, or visit www.enviroexpo.com/

The conference on **Solutions to Coastal Disasters 2005** will be held *8–11 May 2005* in Charleston, South Carolina. It is a conference for coastal planners, managers, scientists, engineers, geologists, economists, oceanographers, meteorologists, property owners, elected officials and others interested in the coasts. Conference topics will focus on the science, tools, management, and solutions to coastal erosion, hurricanes, coastal storms, seismic events and tsunamis, climate change, sea level change, and wind. Multidisciplinary topics and papers are encouraged. For more information contact tel: 1-703-295-6300, 1-800-548-2723; fax: 1-703-295-6144; e-mail: mconferences@asce.org; www.asce.org/conferences/cd05/

A Conference on the El Niño phenomenon and its global impact will be held *16–20 May 2005* in Guayaquil, Ecuador. The meeting aims to discuss El Niño-Southern Oscillation (ENSO) in all aspects related to the ocean, atmosphere, climate, biology and human dimensions, its impact in South America and its teleconnections worldwide. It is the first of a series of Alexander von Humboldt conferences initiated by EGU, international meetings related to geophysical topics of particular importance to South America, which are jointly organized by South American and EGU experts. For more information contact the Conference Secretariat: CIIFEN; Building of the Universo Foundation; Escobedo # 1204 y 9 de Octubre; Guayaquil; Ecuador; tel +5934 2514770; fax +5934 2514771; e-mail: secretaria@ciifen-int.org; www.copernicus.org/EGU/topconf/avh1

The Annual Conference 2005 of the Canadian Standards Association- Building a Sustainable Future, Climate Change and Infrastructure will be held *19–21 June 2005* in Kelowna, B.C., Canada. Join business leaders, regulators, consumers and others to explore current issues and brainstorm workable solutions for climate change and infrastructure. Take the opportunity to network with colleagues, attend interactive sessions, participate in lively discussions and discover the valuable role standards play in our society. For more information contact Michelle Weise, tel: 416-747-2491 or e-mail: michelle.weise@csagroup.org; www.csa.ca/annualconference/2005/

RECENT PUBLICATIONS

Books

Axelrod, R.S., D. Downie, and N.J. Vig (Eds.), 2004: **The Global Environment: Institutions, Law and Policy, 2nd edition**. CQ Press, 1255 22nd St. NW, Suite 400, Washington, DC 20037; www.cqpress.com

Blatt, H., 2004: **America's Environmental Report Card: Are We Making the Grade?** MIT Press, 5 Cambridge Center, Cambridge, MA 02142-1493; mitpress.mit.edu

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WEBSITES OF INTEREST

unfccc.int/resource/kpthermo_if.html

This link on the UN Framework Convention on Climate Change (UNFCCC) gives a hypothetical look at what would happen if different countries were to ratify the Kyoto Protocol. (requires Flash)

www.cses.washington.edu/cig/index.shtml

The Climate Impacts Group (CIG) is an interdisciplinary research group studying the impacts of natural climate variability and global climate change ("global warming") on the U.S. Pacific Northwest (PNW). Through research and interaction with regional stakeholders, the CIG works to increase the resilience of the Pacific Northwest to fluctuations in climate. The CIG's research focuses on four key sectors of the PNW environment: water resources, aquatic ecosystems, forests, and coasts.

www.enviroliteracy.org/category.php/10.html

The Environmental Literacy Council is dedicated to helping citizens, especially young people, participate wisely in this arena. An independent, non-profit organization, the Council gives teachers the tools to help students develop environmental literacy: a fundamental understanding of the systems of the world, both living and non-living, along with the analytical skills needed to weigh scientific evidence and policy choices.

www.whoi.edu/institutes/occi/currenttopics/abruptclimate_15misconceptions.html

Several decades of scientific research have yielded significant advances in understanding the ocean's role in regulating Earth's climate. Recently, increased media coverage of climate science has also highlighted some common misunderstandings about abrupt climate change, its underlying mechanisms, and possible consequences for society. This summary covers some of the major points about abrupt climate change that are often misunderstood.

www.ihdp.org/

IHDP is an international, interdisciplinary, non-governmental science program dedicated to promoting and coordinating research. Its aims are to describe, analyze and understand the human dimensions of global environmental change. IHDP's program is designed around its three main objectives of research, capacity building and networking.

www.nhc.noaa.gov/

The NOAA-National Hurricane Center's mission is to save lives, mitigate property loss, and improve economic efficiency by issuing the best watches, warnings, forecasts and analyses of hazardous tropical weather, and by increasing understanding of these hazards.

www.drought.unl.edu/

The National Drought Mitigation center helps people and institutions develop and implement measures to reduce societal vulnerability to drought.

www.millenniumassessment.org/en/index.aspx

The Millennium Ecosystem Assessment (MA) is an international work program designed to meet the needs of decision makers and the public for scientific information concerning the consequences of ecosystem change for human well-being and options for responding to those changes.

climatechange.unep.net/

This portal is a central source for substantive work and information resources regarding climate change. You can find information based on the key issues within climate change or search by a specific type of resource.

The NETWORK NEWSLETTER is intended for those interested and involved in climate-related impact assessment. It is hoped that it will serve to foster a growing network by keeping the community up to date on the many activities in this wide and varied field. Your involvement in supplying relevant information is essential to the success of this endeavor.

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tel: 1-303-497-8134; fax: 1-303-497-8125

E-mail: jan@ucar.edu; enso@ucar.edu

www.isse.ucar.edu/newshp

www.isse.ucar.edu/signal

Michael H. Glantz Editor

D. Jan Stewart Managing Editor

Jan Hopper Associate Editor

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